AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the present application:

1. **(Withdrawn)** A method of producing a DNA array, characterized by comprising the steps of:

(1) preparing a mixture of DNA fragments in which a modified base or a base is exposed,

(2) bringing the mixture of DNA fragments obtained in step (1) into contact with an antibody specific to the modified base or the base, and separating the mixture into a group consisting of DNA fragments which form an immunocomplex with the antibody and another group consisting of DNA fragments which do not react with the antibody, or a group consisting of DNA fragments showing a high affinity for the antibody and another group consisting of DNA fragments showing a low affinity for the antibody,

(3) identifying all or part of DNA fragments contained in each of the DNA fragment groups, and

(4) arranging one or more nucleic acids capable of hybridizing with any one of the identified DNA fragments on a substrate.

2. **(Withdrawn)** The method according to claim 1, wherein the mixture of DNA fragments prepared in step (1) is

(a) a mixture of DNA fragments in which a modified base or a base is exposed at a cohesive end thereof, obtained by digesting genomic DNA with a restriction enzyme which can digest a DNA regardless of the presence or absence of a modification in a recognition site to generate a cohesive end containing a modified base or a base,

(b) a mixture of single-stranded DNA fragments or partially single-stranded DNA fragments in which a modified base or a base is exposed in the single-stranded region, obtained by fragmenting genomic DNA and rendering the fragmented genomic DNAs fully or partially single-stranded, or

(c) a mixture of DNA fragments having a single-stranded region in which a modified base or a base is exposed.

3. **(Withdrawn)** The method according to claim 2, wherein the genomic DNA is pretreated with a nuclease capable of digesting a single-stranded DNA, before digesting the genomic DNA with the restriction enzyme to obtain the mixture (a).

4. **(Withdrawn)** The method according to claim 2, wherein the genomic DNA or the fragmented genomic DNAs are pretreated with a nuclease capable of digesting a single-stranded DNA, before rendering the fragmented genomic DNAs fully or partially single-stranded to obtain the mixture (b).

5. **(Withdrawn)** The method according to claim 3, wherein, when the mixture of DNA fragments is brought into contact with the antibody in the step (2), at least one antigen-antibody reaction is performed under conditions in which a monovalent binding is dissociated and a divalent binding is maintained, to separate the mixture into a group consisting of DNA fragments capable of binding to the antibody by a divalent binding, as the group consisting of DNA fragments which form an immunocomplex with the antibody, and another group consisting of DNA fragments capable of binding to the antibody by a monovalent binding, as the group consisting of DNA fragments which do not react with the antibody.

6. **(Withdrawn)** The method according to claim 3, wherein, when the mixture of DNA fragments is brought into contact with the antibody in the step (2), at least one antigen-antibody reaction is performed under conditions in which a group consisting of DNA fragments showing a high affinity can be separated from another group consisting of DNA fragments showing a low affinity on the basis of the difference between a monovalent binding and a divalent binding, to separate the mixture into a group consisting of DNA fragments capable of binding to the antibody by a divalent binding, as the group consisting of DNA fragments showing a high affinity, and another group consisting of DNA fragments capable of binding to

the antibody by a monovalent binding, as the group consisting of DNA fragments showing a low affinity.

7. **(Withdrawn)** A DNA array obtainable by the method according to any one of claims 1 to 6 and 12 to 13.

8. **(Withdrawn)** A group of DNA fragments, characterized by comprising only any one of

(1) a DNA fragment having cohesive ends containing a modified base or a base at both ends, wherein a modified base is contained in both of the cohesive ends,

(2) a DNA fragment having cohesive ends containing a modified base or a base at both ends, wherein a modified base is contained in only one of the cohesive ends, or

(3) a DNA fragment having cohesive ends containing a modified base or a base at both ends, wherein no modified base is contained in both of the cohesive ends.

9. **(Withdrawn)** A DNA array characterized in that one or more nucleic acids capable of hybridizing with all or part of DNA fragments contained in the group of DNA fragments of claim 8 are arranged on a substrate.

10. **(Currently Amended)** A method of analyzing a modification in a DNA to be assayed, comprising the steps of:

(1) preparing a mixture of DNA fragments in which a modified base or a base is exposed, from the DNA to be assayed,

(2) bringing the mixture of DNA fragments obtained in the step (1) into contact with an antibody specific to the modified base or the base, and separating the mixture into a group consisting of DNA fragments which form an immunocomplex with the antibody and another group consisting of DNA fragments which do not react with the antibody, or a group consisting of DNA fragments showing a high affinity for the antibody and another group consisting of DNA fragments showing a low affinity for the antibody, and

(3) analyzing all or part of DNA fragments contained in each of the DNA fragment groups with a DNA array,

wherein the mixture of DNA fragments prepared in step (1) is

(a) a mixture of DNA fragments in which a modified base or a base is exposed at a cohesive end thereof, obtained by digesting genomic DNA with a restriction enzyme which can digest a DNA regardless of the presence or absence of a modification in a recognition site to generate a cohesive end containing a modified base or a base, wherein the genomic DNA is prepared from a biological sample and pretreated with a nuclease capable of digesting a single-stranded DNA, before digesting the genomic DNA with the restriction enzyme, or

(b) a mixture of single-stranded DNA fragments or partially single-stranded DNA fragments in which a modified base or a base is exposed in the single-stranded region, obtained by fragmenting genomic DNA and rendering the fragmented genomic DNAs fully or partially single-stranded, wherein the genomic DNA or the fragmented genomic DNAs are prepared from a biological sample and pretreated with a nuclease capable of digesting a single-stranded DNA, before rendering the fragmented genomic DNAs fully or partially single-stranded. ~~or~~

~~(c) a mixture of DNA fragments having a single-stranded region in which a modified base or a base is exposed.~~

11. **(Withdrawn)** A method of purifying a double-stranded DNA fragment having a cohesive end, characterized by bringing the double-stranded DNA fragment into contact with an antibody specific to a base contained in the cohesive end.

12. **(Withdrawn)** The method according to claim 4, wherein, when the mixture of DNA fragments is brought into contact with the antibody in the step (2), at least one antigen-antibody reaction is performed under conditions in which a monovalent binding is dissociated

and a divalent binding is maintained, to separate the mixture into a group consisting of DNA fragments capable of binding to the antibody by a divalent binding, as the group consisting of DNA fragments which form an immunocomplex with the antibody, and another group consisting of DNA fragments capable of binding to the antibody by a monovalent binding, as the group consisting of DNA fragments which do not react with the antibody.

13. **(Withdrawn)** The method according to claim 4, wherein, when the mixture of DNA fragments is brought into contact with the antibody in the step (2), at least one antigen-antibody reaction is performed under conditions in which a group consisting of DNA fragments showing a high affinity can be separated from another group consisting of DNA fragments showing a low affinity on the basis of the difference between a monovalent binding and a divalent binding, to separate the mixture into a group consisting of DNA fragments capable of binding to the antibody by a divalent binding, as the group consisting of DNA fragments showing a high affinity, and another group consisting of DNA fragments capable of binding to the antibody by a monovalent binding, as the group consisting of DNA fragments showing a low affinity.

14. **(Canceled)**

15. **(Canceled)**

16. **(Canceled)**

17. **(Withdrawn)** The method according to claim 14, wherein, when the mixture of DNA fragments is brought into contact with the antibody in the step (2), at least one antigen-antibody reaction is performed under conditions in which a group consisting of DNA fragments showing a high affinity can be separated from another group consisting of DNA fragments showing a low affinity on the basis of the difference between a monovalent binding and a divalent binding, to separate the mixture into a group consisting of DNA fragments capable of

binding to the antibody by a divalent binding, as the group consisting of DNA fragments showing a high affinity, and another group consisting of DNA fragments capable of binding to the antibody by a monovalent binding, as the group consisting of DNA fragments showing a low affinity.

18. **(Withdrawn)** The method according to claim 15, wherein, when the mixture of DNA fragments is brought into contact with the antibody in the step (2), at least one antigen-antibody reaction is performed under conditions in which a monovalent binding is dissociated and a divalent binding is maintained, to separate the mixture into a group consisting of DNA fragments capable of binding to the antibody by a divalent binding, as the group consisting of DNA fragments which form an immunocomplex with the antibody, and another group consisting of DNA fragments capable of binding to the antibody by a monovalent binding, as the group consisting of DNA fragments which do not react with the antibody.

19. **(Withdrawn)** The method according to claim 15, wherein, when the mixture of DNA fragments is brought into contact with the antibody in the step (2), at least one antigen-antibody reaction is performed under conditions in which a group consisting of DNA fragments showing a high affinity can be separated from another group consisting of DNA fragments showing a low affinity on the basis of the difference between a monovalent binding and a divalent binding, to separate the mixture into a group consisting of DNA fragments capable of binding to the antibody by a divalent binding, as the group consisting of DNA fragments showing a high affinity, and another group consisting of DNA fragments capable of binding to the antibody by a monovalent binding, as the group consisting of DNA fragments showing a low affinity.

20. **(Withdrawn)** The method according to claim 10, wherein the DNA array used in step (3) is produced by a method comprising the steps of:

(i) preparing said mixture of DNA fragments,

(ii) bringing the mixture of DNA fragments obtained in step (i) into contact with an antibody specific to the modified base or the base, and separating the mixture into a group consisting of DNA fragments which form an immunocomplex with the antibody and another group consisting of DNA fragments which do not react with the antibody, or a group consisting of DNA fragments showing a high affinity for the antibody and another group consisting of DNA fragments showing a low affinity for the antibody,

(iii) identifying all or part of DNA fragments contained in each of the DNA fragment groups, and

(iv) arranging one or more nucleic acids capable of hybridizing with any one of the identified DNA fragments on a substrate.